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ABSTRACT

This booklet, one in a series about life on modern farms, describes the daily life of the Maurice Layton family, broiler (chicken) growers in Mississippi. Beginning with early morning chores, the booklet traces the family's activities through a typical day while explaining how a broiler farm operates. Although the booklet focuses on broiler growing, it includes discussion of major topics that are common to all of the booklets: (1) farming as a business, (2) the impact of technology on farming, (3) the increasing specialization in farming, (4) the role of government in agriculture, (5) the diversity in farming, (6) the interdependence between agriculture and the rest of the economy, and (7) the way of life of farmers and their families. The booklet is illustrated with black and white photographs. (KC)

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PEOPLE ON THE FARM:

BROILER GROWERS

U.S. DEPARTMENT OF AGRICULTURE
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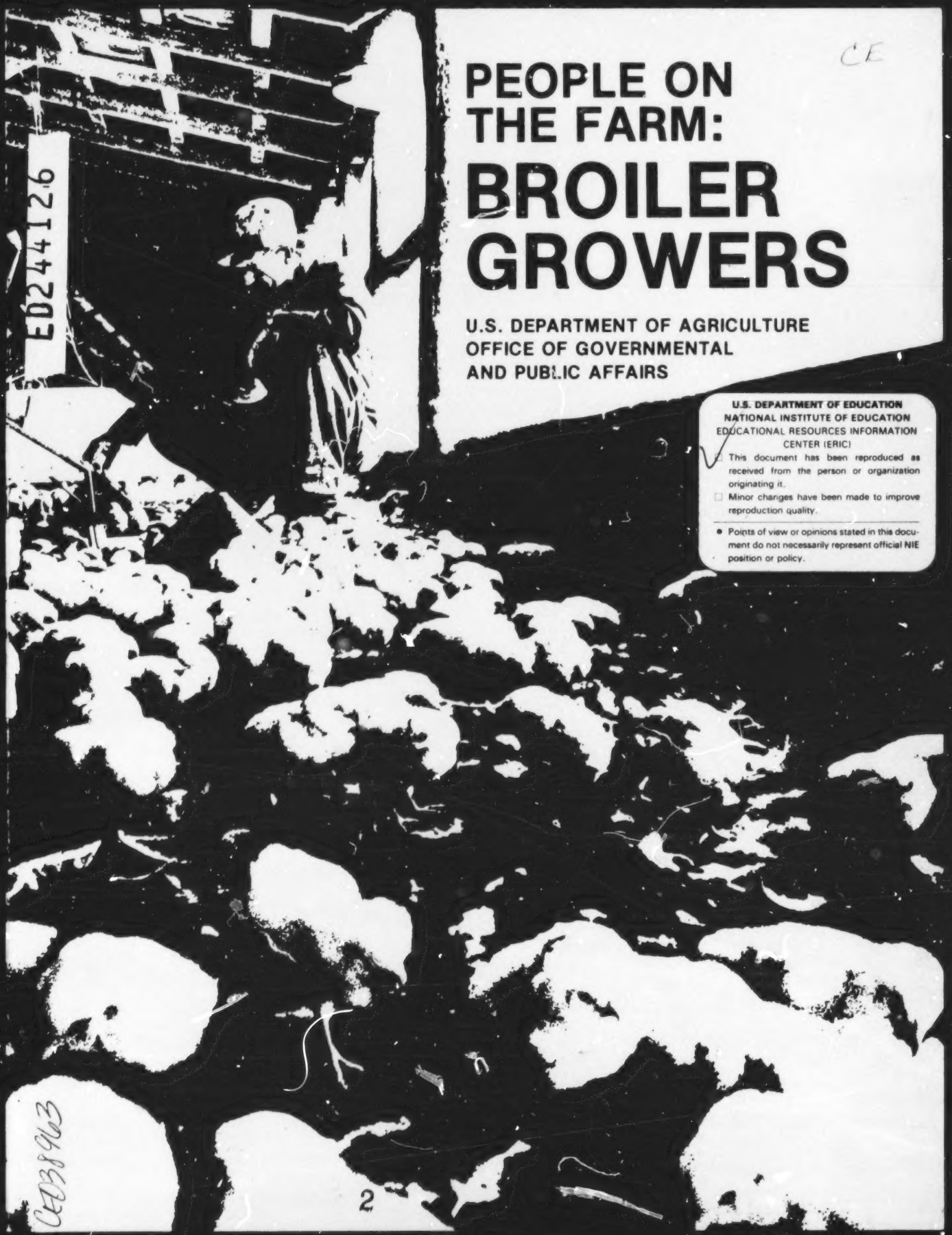

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A BUSY INDUSTRY

Today's average broiler weighs nearly a third more than its midthirties counterpart.

In 1975 the average broiler weighed 3.76 pounds, compared with the 2.86 pounds of the 1935 broiler. The change has been gradual, with spurts during World War II and the late fifties.

Year	*Average live weight* (pounds)
1935	2.86
1940	2.88
1945	3.02
1950	3.08
1955	3.06
1960	3.35
1965	3.47
1970	3.62
1975	3.76

The industry as a whole turns out nearly 3 billion broilers a year.

THEY'RE GAINING ON US

Maurice and Ann Layton are an integral part of a finely tuned production machine that produced 8.1 billion pounds of ready-to-cook broiler meat in 1975 in the United States—enough to provide almost 37 pounds of chicken for each of us in the country.

What was once a special treat served only on Sundays has become a two- or three-times-a-week meal for millions of Americans. Annual consumption of broilers has leaped from a half pound per person in 1934 to 36.9 pounds in 1975.

Across America there are 30,000 farmers like Maurice and Ann Layton growing broilers on contract. The Laytons turn out 150,000 broilers a year. Many farmers produce a lot more than that.

It's a family job, raising broilers. While Maurice and Ann Layton of Magee, Miss., raise the height of feeders to meet growing height of 5-week-old birds, they are assisted by son Kelvin, who is hauling feed to the feeders.

PEOPLE ON THE FARM:

BROILER GROWERS

Maurice Layton smiles when a door opens midway in the long narrow broiler house and his wife, Ann, her hair swept back under a protective scarf, joins him in his work.

She takes the small broom from Maurice and starts walking among the chickens. She brushes the 8-foot-long galvanized metal watering troughs clean of any feed, dust, and feathers which might have accumulated in them overnight.

As she walks, the crescendo of the birds' chirping increases.

In the half hour that Maurice has been in the building—which is as long as a football field and a fourth as wide—his chief concern has been with the temperature. Last night's 27 degrees Fahrenheit was the coldest so far this season. "I'm glad I got in some more butane last week," he says as he checks the thermometer. He seems satisfied that it registers 50 degrees.

When Ann joins her husband in the broiler house, he turns to the heavier work—filling a cart with feed and wheeling it among 350 metal feeders from which the chicks eat. At each feeder, he stops, digs into the nutritious meal with a scoop, and transfers the feed into the circular top of the feeder. The feed settles down into trays around the bottom of each feeder at just the right height for the chickens to find their food.

Maurice and Ann can remember when it was different feeding chickens. Years ago, a farmer's wife threw out a few handfuls of grain once or twice a day to a small flock of chickens roaming free in her barnyard. The birds foraged for the rest of their feed. By the time they were 6 months old, such chickens might have become big enough to eat.

NOW IT'S DIFFERENT

Today's broilers are ready for market in one-third that time—at 8 weeks or less—thanks in large part to a scientifically controlled diet.

For years, consumers could buy broilers or frying chickens only in the summer. Then nutritionists discovered vitamin D. Suddenly it was more practical to raise chickens indoors, out of the sun, and all year round by feeding the birds cod liver oil. Other vitamin discoveries helped, too.

Meanwhile, other scientists—disease fighters—helped make it more practical for broilers to be grown in bigger and bigger flocks. The chances of being wiped out financially by some dread poultry ailment became so poor that raising broilers became a reasonable risk.

Such scientific improvements wrought awesome changes in the broiler industry. Now a computerized broiler feed mill, orchestrated by an expert with a Ph.D. degree in nutrition, provides tons of the proper feed mixture at a time. Carbohydrates, vegetable proteins, animal proteins, vitamins, minerals, stabilized fats, antioxidants, antibiotics, and other disease-fighting or nutritional additives are combined correctly down to quantities as small as 3 ounces to the ton.

This sophisticated feed is then delivered to growers such as Maurice and Ann.

Improved feeding isn't the only basis for the revolution in the broiler industry in the last few decades.

Geneticists have been working at fitting together the "perfect broiler" for years. They separated the best laying chicken strains from the best meat-producing strains. Then, producers put the first group to work laying eggs and the second into the broiler business.

Dale Yelverton, right, mill manager for McCarty-State Pride, Inc., broiler feed mill in Magee, Miss., and Wiley Kirkland, the firm's nutritionist and ingredient buyer, discuss feed formulations beside panel which diagrams flow of ingredients in the mill, from railroad car inputs to delivery trucks. Machine at rear reads punch cards for correct mixture of several feed ingredients being prepared for broiler growers.

BUYING THE GRADE

Although all broilers are inspected for wholesomeness, not all broilers are graded according to quality. Broiler processors are not required by law to grade their birds. That's voluntary.

However, when a consumer sees this symbol on a whole broiler or broiler parts . . .

. . . it tells him the birds are:
—fully fleshed and meaty
—well finished
—attractive in appearance

That symbol means the bird is, or the parts are, from the highest quality broiler.

If the broiler or parts are grade B, they probably wouldn't be grade labeled, as that would identify the product as being of second quality. A bird bearing the only other official U.S. grade for ready-to-eat chicken—grade C—is approved for human consumption, but is diverted at the processing plant for further processing into other chicken foods and so never appears at the market.

The letters "U.S." indicate that a trained Government grader did the grading. The processor is billed for the grader's services.

Only plants which use the USDA grading service may utilize the official grade mark.

Besides grades, there are classes by which broilers are sold.

The following are the various classes of chickens:

a. *Rock Cornish game hen or Cornish game hen.* A Rock Cornish game hen or Cornish game hen is a young immature chicken (usually 5 to 6 weeks of age), weighing not more than 2 pounds ready-to-cook weight, which was prepared from a Cornish chicken or the progeny of a Cornish chicken crossed with another breed of chicken.

b. *Rock Cornish fryer, roaster, or hen.* A Rock Cornish fryer, roaster, or hen is the progeny of a cross between a purebred Cornish and a purebred Rock chicken, without regard to the weight of the carcass involved. However, the term "fryer," "roaster," or "hen," applies only if the carcasses are from birds with ages and characteristics that qualify them for such designation under paragraphs c and d.

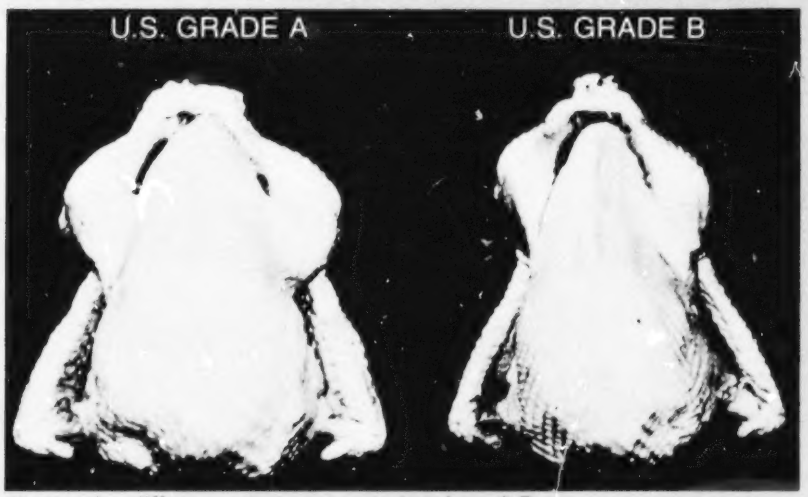
c. *Broiler or fryer.* A broiler or fryer is a young chicken (usually under 13 weeks of age), of either sex, that is tender-meated with soft, pliable, smooth-textured skin and flexible breastbone cartilage.

d. *Roaster or roasting chicken.* A bird of this class is a young chicken (usually 3 to 5 months of age), of either sex, that is tender-meated with soft, pliable, smooth-textured skin and breastbone cartilage that may be somewhat less flexible than that of a broiler or fryer.

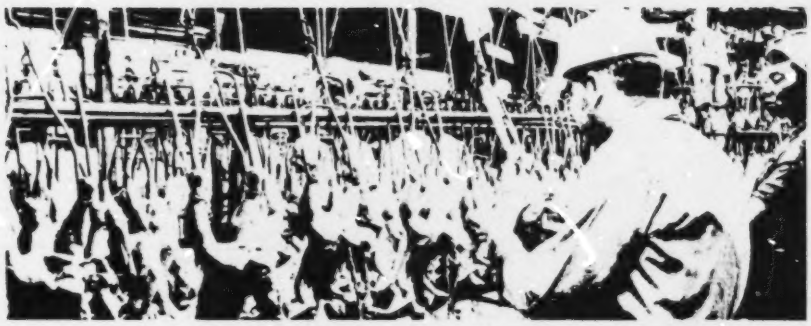
e. *Capon.* A capon is a surgically unsexed male chicken (usually under 8 months of age) that is tender-meated with soft, pliable, smooth-textured skin.

f. *Hen, fowl, or baking or stewing chicken.* A bird of this class is a mature female chicken (usually more than 10 months of age) with meat less tender than that of a roaster or roasting chicken and nonflexible breastbone tip.

g. *Cock or rooster.* A cock or rooster is a mature male chicken with coarse skin, toughened and darkened meat, and hardened breastbone tip.



Notice the difference between grades A and B



Inspecting for wholesomeness is the job of at least one U.S. Department of Agriculture inspector, or USDA-approved inspector, in every broiler processing plant in the United States. In Jackson, Miss., one such inspector is James Slay, who inspects the broilers within minutes of their slaughter.

WHAT'S A "PERFECT BROILER?"

The broiler industry wanted birds that grow meat rapidly, especially thick meaty thighs and breasts. So it developed them. It wanted birds with strong bones at an early age to carry the extra weight of this meat. And it got them. It wanted birds that are resistant to disease and that feather rapidly (with white feathers because pulling black feathers leaves spots). Such birds were developed. The industry wanted birds with yellow skins, birds that convert less feed into more meat, birds that yield a high percentage of their weight in usable meat and, finally, meat-type birds that produce a reasonable number of eggs which will hatch into healthy chicks. It got them.

One of the most effective vehicles for improving the type of chicken to be grown as a broiler was the "Chicken of Tomorrow Contest," conducted on a national scale from 1948 to the mid-1950's. Breeders submitted eggs to a central location, where the eggs were hatched and the offspring fed until they were of market weight and then slaughtered. Broilers in the contest were judged on several factors, including their growth rate, the efficiency with which they converted feed to meat, and their shape especially the amount of meat on the breasts and drumsticks.

The first winner was a cross between California Cornish and New Hampshire breeds. The Cornish strain provided the broad breast and thick drumsticks; the New Hampshire strain provided the fast growth and efficiency.

Other birds and crossbreeds won since then but the trend has been clear: the 1949 winning entry in a junior "Chicken of Tomorrow Contest" was a New Hampshire-Rock Red Cross. It took 13 weeks and 2 days to reach an average weight of 5½ pounds. In 1973, the top entry in the contest for young breeders was a White Cross which averaged 5.7 pounds in only 7 weeks and 5 days.

It was this combination of improved breeding and improved feeding that revolutionized the American broiler industry.

There is a saying in the industry that chickens are better fed and enjoy a more nutritious diet than humans.

But it would be hard to imagine a better breakfast than the Laytons enjoy before starting their work in the broiler houses—bacon, eggs ,sausage, grits, toast and muscadine jam, and coffee.

"The kids come out of bed eating," Ann says with a smile.

SAFETY FIRST, LAST, AND ALWAYS

Every poultry processing plant in the United States which ships its products out of State has at least one U.S. Department of Agriculture inspector at work in it—usually more than one, depending on volume. And every poultry plant in the U.S. which ships just within its particular State has either a State or Federal inspector at work inside.

Broilers or broiler parts which have been inspected by Federal inspectors bear a symbol at retail which looks like this:

Each processing plant is inspected daily for cleanliness. Earlier, the processing system in each plant has been approved as appropriate.

When the live broilers first arrive at a plant, inspectors immediately remove those birds which have already died, are obviously ill, or are suspected of being ill or carrying a disease harmful to man.

When the accepted bird has been killed in the plant and its viscera pulled out for inspection, the whole bird is examined once again for evidence of breast blisters, bruises, or any other defect which might be unwholesome for use as human food. Breast blisters and bruises are cut out by an expert standing beside the inspector. Occasionally, whole birds may be condemned and taken out of the line.

In 1975, only 2.3 percent of broiler pounds (live weight) had to be condemned.

Other inspectors (Food and Drug Administration, State, and local) take over inspections after the broiler meat leaves the processing plant.

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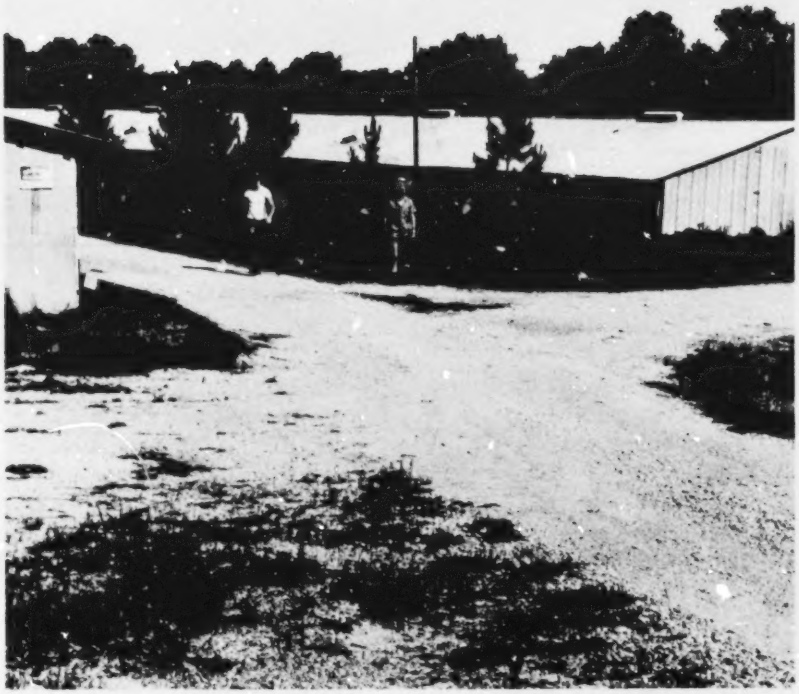

Maurice Layton and his son, Blake, who is home from college, walk from broiler houses toward home, about 200 yards away, after making sure birds in broiler houses are fed and other chores are finished.

Opposite page:
Ann Layton says that tending such young chicks as these day old birds is like tending babies in a nursery . . . they practically "coo" when you feed and water them. Edge of brooder canopy is at left. Young chicks will keep warm under it.

DAY'S WORK BEGINS EARLY

Work begins about 7 a.m. with two members of the family walking the 200 yards from home to the two broiler houses. Usually this is Kelvin Dirk, 14, or Anita, 17, doing their chores before catching the school bus at 7:30 a.m. This morning, Blake 20, is home on vacation from college and is able to help out. He heads toward the newer broiler house.

There are two broiler houses on the Layton farm. The older one, where Maurice begins work, is 40 feet wide and 360 feet long. It is covered with a metal roof that rises to a height of some 12 feet above the dirt floor and is supported by poles. Plastic curtains, which can be raised (to cut off the flow of air) or lowered (to increase the flow of air), run the full length of both long sides of the structure.

Inside are 350 metal feeders. Maurice fills half of them in the morning. Kelvin will fill the other half after school. There are also 60 8-foot-long metal waterers with hoses attached to each. They fill with water and stop filling automatically, assuring the chickens a constant supply of water but preventing overflows.

Also in the broiler house are 20 low-hanging metal canopies called brooders, which are spaced near the longer walls of the building. These canopies burn butane gas and can be adjusted in height to bring heat close to the days-old chicks (lower position) or to spread heat throughout the house (higher position). They substitute for a mother hen when the chicks are very young, providing warmth and a place to snuggle.

In the new broiler house, which is parallel to and about 25 yards from the older broiler house, feed is carried automatically by floor level, chain troughs to the chickens throughout the house. This device is a great labor saver. Four automatic feeding troughs wend their way through the building (this building is 50 feet wide and 300 feet long) like the tracks of a toy train.

As Blake turns on the automatic feeder, the computer-formulated meal begins a measured flow from its centralized bin in the broiler house into the separate feeder troughs. The birds jump at the sound of the chains starting to distribute feed, but they soon find feed in one of the troughs near them and begin to eat. Blake keeps the troughs going until they return with some feed in them, indicating the birds have eaten all they wanted. It reduces waste. The feeder usually runs 30 to 45 minutes.

In other respects, the second broiler house is like the first: waterers, curtains, brooders, and all.

HOUSES DIFFER

Across the country, broiler houses look alike and are similarly equipped, though they will vary in length and width as well as in the age and design of their equipment. Many provide a more completely enclosed, controlled environment.

The Laytons look after 15,000 birds in each broiler house—30,000 at a time. The chicks are grown from one day of age until they weigh about 4 pounds and are large enough to be processed into the whole broilers and broiler parts so familiar at groceries and supermarkets across the United States. That is nearly 8 weeks.

From the beginning of each day to its end, it is obvious that growing broilers on the Layton farm is a family affair.

"Everybody in the family knows what needs to be done," Maurice says. "I don't have to tell them. If I'm away from home I don't have to worry."

Both Maurice and Blake check the temperature inside the broiler houses because there is a range within which the birds are most comfortable, eat the most feed, and convert feed into meat most efficiently. If possible, the Laytons like to keep the temperature in the houses somewhere between 60 degrees and 85 degrees, though it is necessary to keep day-old chicks much warmer—about 95 degrees at the edge of the brooder. The heat is gradually reduced as the chicks grow older.

For the best feed efficiency with good growth, a temperature of 75 degrees is recommended after the birds' second week in the house.

The Laytons use various methods to control the temperature in the houses. On cold winter nights they can light and adjust the gas burners in the brooders. They may also raise and lower the plastic curtains along the sides of the buildings to control ventilation. There are also ventilators in the roof of each broiler house which can be adjusted.

Good judgment is what makes good broiler producers—judgment about heat, ventilation, and humidity. The chicks may be chilled if there is too much ventilation. At the same time, the heat, which costs money to build up could be dispersed by too much ventilation. On the other hand, without adequate ventilation, ammonia from the chicken manure may build up enough to affect the eyes of both chicken and grower.

A draft or a wave of cold air directly on the birds must be avoided. So must wide daily fluctuations of temperature of 20 to 30 degrees during the first 6 weeks of growth.

If it gets too hot in the broiler

Broiler production, average producer and retailer price per pound, and civilian per capita consumption, by years (Includes Alaska and Hawaii beginning in 1961)

Year	Liveweight production	Average price received by producers per pound [1]	Retail price per pound [2]	Civilian per capita consumption
	Million pounds	*Cents*	*Cents*	*Pounds*
1935	123	20.0	29.7	.7
1940	413	17.3	29.5	2.0
1945	1,107	29.5	48	5.0
1950	1,945	27.4	59.5	8.7
1955	3,350	25.2	57.4	13.8
1960	6.017	16.9	42.7	23.4
1965	8,111	15.0	39.0	29.6
1970	10,819	13.6	40.8	36.9
1971	10,818	13.7	41.0	36.7
1972	11,480	14.1	41.4	38.4
1973	11,220	24.0	59.6	37.4
1974	11,319	21.5	56.0	37.5
1975	11,034	26.3	63.3	36.9

[1] Since the early 1960's there have been few actual live broiler sales. So this has been reported as a liveweight equivalent price.

[2] Retail prices for 1935, 1940 and 1945 are derived from prices of roasting chickens those years.

Maurice and Ann Layton examine a new batch of broiler chicks. Young birds will cluster around the gas-fired brooder canopies (one is suspended between the Laytons) during the early days of their stay. Curtains on outer walls of the building can be raised or lowered to control air circulation and temperature.

houses, the birds might suffer heat prostration. Besides, broilers don't eat when it gets too hot . . . or even when it gets too dark. Broiler growers leave some lights on at night during the summer so the birds will eat during those cooler hours, and in the winter when the days are short. Lights also help prevent chickens from piling up on one another when they become frightened.

Even if a new person should suddenly be placed in charge of them, broilers will become distressed.

WATERERS AND FEEDERS NEED CHECKING

After checking the temperature and making whatever adjustments are necessary, the Laytons clean the waterers and either turn on the automatic feeding troughs in the newer house or fill half the circular feeders in the older house.

At the same time, they are checking to see if the waterers and feeders are at the correct height. All must be adjusted upward as the birds grow taller. At the right height, the birds are more likely to eat more and spill less. Also, the birds can develop breast blisters if they are able to rest on the edges of feeders or waterers.

When there are 50 waterers and 350 individual feeders, or 50 waterers and 4 long automatic feeder lines in a broiler house, one has a lot of adjusting to do.

On most visits to the broiler house, Maurice or someone else in the family will walk slowly and deliberately among the 15,000 birds, listening and looking for signs of illness among the birds. Usually, there is a low chirping among the birds punctuated by louder chirps of alarm if there is a sudden noise or movement. It's almost as if they are saying "we're getting along, eating and drinking. We don't especially mind you, but don't get rough or hostile."

A startling thing happens when Maurice interrupts this walk to whistle a long single note. An immediate silence falls over the chickens. There is no more chirping at any level. Heads stand upright. Eyes are alert.

Maurice says it's instinct telling the chickens that the whistle might be the sound of a hawk swooping down on them. Maurice takes advantage of the birds' silence to listen attentively for sounds of breathing difficulties or other signs of illness.

The Laytons frequently examine the litter in each house. Litter is a blanket of wood chips, sawdust, or other soft absorbent material upon which the birds walk and rest in the broiler houses. It is removed or covered as it becomes caked and is ultimately removed and replaced with new litter. Caked litter will irritate a bird's breast when it rests, causing blisters which

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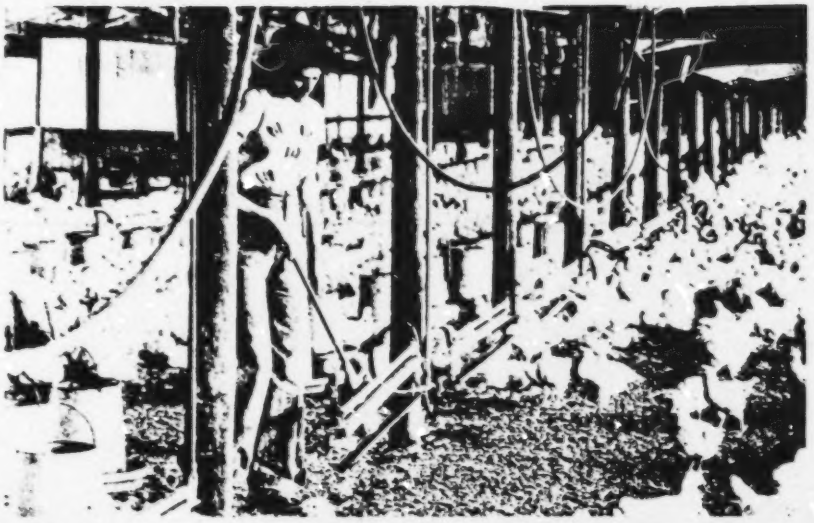

Cleaning out waterers is essential daily chore in broiler house. Note that each waterer that Anita Layton is sweeping out can be adjusted to growing height of birds.

GETTING DRESSED FOR DINNER

When the broiler firm picks up the finished broilers at the growers, the birds are taken to a modern poultry processing plant. There the birds are disassembled quickly, cleanly, and efficiently.

The aim from the beginning is to get the slaughtered birds washed and cooled as quickly as possible to prevent bacterial spoilage.

Defeathered by machine, after it has been machine-killed, the chicken quickly passes through devices which neatly remove the head and feet. Swiftly it is moved on.

Skilled workers with sharp knives stand shoulder to shoulder swiftly opening the bird for inspection by a U.S. Department of Agriculture (USDA) inspector. A skilled trimmer beside the inspector removes any blistered breast or bruised part that the inspector indicated.

Then, on to the rest of the disassemblers—the liver trimmers, the gizzard cutters, and so on—until finally one more inspector says it's okay to send the broiler into a chiller.

It's been just 20 minutes since the broiler was killed.

After chilling, the broiler carcass is graded for quality, and either packaged as is or sent along to more cutters. If a fast-food chain wants birds that weigh in the range of 2 lb. 6 oz. to 2 lb. 10 oz., a delicate set of scales separates out the carcasses in this weight range and sends them to a special station for custom cutting.

Finally, the whole birds and the parts are packaged for specific markets. Trucks take them to food establishments, distributors, and retailers.

A use is found for every part of the chicken. Some deboned meat, such as from backs, necks, and wings may go into hot dogs and bologna. The feathers, bought with the rest of the residue by a local rendering plant, may go into feather meal or a high protein product used to feed chickens, which may "visit" the same plant several months later. Heads, entrails, and feet may go into poultry feed or pet foods.

reduce the value of the bird in the processing plant.

It takes about an hour and a half each morning for Maurice and Ann to take care of their broilers. They repeat the process about noon, and the children carry on for them in an after-school visit.

After the morning's care of the chickens, Maurice and Ann head for the house and a coffee break.

The brick ranch house that they built themselves for $15,000 replaces their first home, destroyed by fire in 1970. The paneled kitchen is roomy enough for the entire family, yet provides opportunities for two people to converse—at a lunch counter or beside a coffee table before the comfortable couch.

CHURCHILL QUOTED

"Sir Winston Churchill said something to the effect that useful human being are divided into two classes," Maurice muses. "Churchill said there are those whose work is work and whose pleasure is pleasure, and then there are those whose work and pleasure are the same thing.

"That's the way I feel about farming. It's not work. It's a pleasure. I don't want to quit even when the sun goes down."

Then, Maurice, a graduate of Mississippi State University, added: "Jefferson said that those who labor in the earth are the chosen people of God."

"There is no way you could get me back into town," Ann says. And her idea of being crowded is living in the town of 5,000 where she was reared.

Ann, too, holds a degree—from Mississippi University for Women—in bacteriology. That got her into trouble when she first started caring for chickens. She took too much time scrubbing out the waterers—as if they were test tubes in a laboratory. Such scrupulous care wasn't necessary in a chicken house

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and took too much time. It was inefficient, and efficiency is a key word in today's broiler industry.

Over the past few decades, the old-fashioned farm where chickens were bred, hatched, fed, slaughtered, and finally sent to market—all on the same farm—has vanished. The business of growing chickens changed so fast it exploded into a half dozen pieces, then recombined into a huge shiny new "chicken machine" with boundaries far beyond the individual farm.

While there may be some question about the independence of today's farmer in the broiler industry, Maurice and Ann Layton are farming, and they love it. For them, the broiler industry is a golden opportunity to live the way they want—on a farm, with the family, all the while building an equity in their property and enjoying life in the country: hunting, fishing, and "listening to the birds go to bed at night," as Ann describes it.

"I always wanted to raise nothing but cattle," Maurice says, "but I can't afford to do it today. My daddy was getting 30 to 35 cents a pound for calves back in 1950 and that's still what I can sell them for, even though the cost of raising them has gone way up."

So the Laytons and many others have chosen to grow broilers as well as raise cattle.

Maurice's father was one of the first in his part of the South to switch from raising cotton to raising feeder cattle—young cattle that are born on the farm and sold at a light weight to others to be fed until large enough to be slaughtered for meat.

Like a lot of other farmers and their sons, Maurice and his dad had an agreement. As he grew to manhood, Maurice would work with his father clearing land of brush and trees, with the understanding that he'd be able to buy 320 acres of it later. "Later" came in 1956 when Maurice was discharged from the Army after 2 years of service.

THE LAYTONS BEGIN FARMING

Maurice and Ann, the girl he married before entering the service, fixed up a tenant house as their home and borrowed $24,000 from the Federal Land Bank to buy their 320 acres. The Land Bank is a farmer-owned financing institution which borrows funds from the Nation's money markets to lend to farmers to buy land.

Maurice and Ann tried raising hogs and cattle, using some animals they had obtained from Maurice's father. But things didn't go well. "The bottom had fallen out of the cattle market," Maurice says. Prices for feeder steers weren't high enough for Maurice and Ann to keep up payments on a $22,000 production loan from the Farmers Home Administration (FmHA). The FmHA, a Government agency, lends millions of dollars each year to thousands of farmers to help them with their farming operations. This often supplements the money lent to farmers by local bankers and other sources.

By 1964—8 years after they started farming—Maurice and Ann were $12,000 behind in payments on that loan. In addition, three children had joined the family, so family living expenses were higher.

That year, Ann went to work as a child welfare worker in nearby Mendenhall, and Maurice became a salesman for the Magee Cooperative—essentially a farm supply store owned by farmers in the community.

"For the next two years," Maurice recalled, "we sold some cattle, raised vegetables for sale, and spent very little." The two older children were in school most of the day; the youngest stayed with his grandmother.

By 1966, because of the jobs in town and a slight increase in cattle prices, the Laytons had caught up on the delinquency on their cattle loan. So Ann quit her job in town.

"We decided that we should give our children the attention that I was giving other people's children," Ann says firmly.

And to make sure she could stay home, they went into the chicken business—to stabilize their income against the ups and downs of the cattle market. They first decided to grow meat-type pullets—young chickens that would grow to maturity and lay eggs that would become broilers.

They borrowed $6,000 from the Federal Land Bank to help build an $8,000 chicken house and another $1,000 from a local bank to help equip it.

Success began to creep into

BIG BUSINESS

Much about the broiler industry is big. The four largest firms together processed 2 billion pounds of broilers (live weight)—or 18 percent of the total market—in 1975. More than half (55 percent) of the total broiler market was processed by 20 firms that year.

A cooperative, Gold Kist, has a total capacity in its several plants to handle an estimated 108,000 birds per *hour*.

Other familiar names like Holly Farms, Kentucky Fried Chicken, Perdue, Swift, Valmac, Tyson Foods, J&M Poultry, Central Soya, Conagra and Wayne Poultry Division of Allied Mills are among those that the industry rates as its top producers.[1]

[1] Firm or product names used in this publication are solely for the purpose of providing specific information. Mention of these names does not constitute warranty of a product by the U. S. Department of Agriculture or an endorsement of it by the Department to the exclusion of other products.

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COUNT DOWN

They started counting the farms which grow broilers in 1954. That year, there were 50,094 such farms.

In 1969, the number was down to 33,688. Figures from the 1974 Census of Agriculture were not yet available by publication time.

their lives.

Maurice and Ann stayed in the pullet business—growing chickens for the local cooperative—until late in 1967, when the cooperative went out of the poultry business.

In February 1969, the Laytons signed a contract with McCarty Enterprises (now McCarty-State Pride, Inc.) to grow broilers. They built another chicken house, but this time the cost of construction had gone up to $12,000. Among other reasons the equipment was more sophisticated. A chain feeder, for instance, would help the Layton family care for more chickens.

Within a year, Maurice had quit his job in town . . . broilers were providing the income security he thought he needed to back up his cattle operation.

Across the country, few farmers are full-time broiler growers. For the most broiler growing is combined with other farming operations or a job "in town."

CONTRACT SPELLS OUT TERMS

This is how broiler growing works for the Laytons.

The birds that the Laytons raise from one day to about 7½ weeks of age are actually owned, beginning to end, by McCarty-State Pride Farms, Inc., of Mississippi. McCarty-State Pride is a firm created by combining companies (once separately owned) which produced live broilers under one ownership and processed them under another. McCarty Enterprises was one of the original companies.

The Laytons sign a new contract with McCarty-State Pride for each group of broilers brought to their farm. In late 1975, the contracts called for the Laytons to be paid 2¾ cents a pound for the final live weight of the birds that they raised.

There are two other important aspects of the contract.

First, there is a guaranteed minimum payment that McCarty-State Pride pays the Laytons in case disaster should strike the flock on the Layton farm.

Second, there is the bonus payment the Laytons receive if the birds they raise convert feed into meat at a better than average rate.

In the fall of 1975 the minimum payment was 6½ cents for each bird placed in the broiler house.

However, when the birds are taken by McCarty-State Pride for processing, the Laytons are paid by the pound, which adds up to more than the guaranteed minimum. Their payments usually average 10 cents a bird.

The minimum payment is designed to cover the cash expenses of raising the bird: heating bills, mortgage payment,

It paid off when a major crisis hit the Laytons in 1974. Small but unacceptable levels of the toxic pesticide dieldrin were found in some chickens being slaughtered in Mississippi. Broilers being grown by McCarty Enterprises (as the original firm was named) and others had to be destroyed.

"I wasn't thinking so much of the $2,000 to $3,000 of anticipated income we lost that year; it was just the waste of those birds," Ann says.

The dieldrin in the birds was discovered as the U.S. Department of Agriculture monitored the level of some 50 chemicals in the carcasses of livestock and poultry.

Earlier, in 1973, McCarty had experienced an exceptionally good year in profits, so the firm had raised its contracts from 2.25 to 2.75 cents a pound and then made the increase retroactive for 8 months and paid their growers the difference. Retroactive reductions are not legal.

After the dieldrin incident—and also because of market conditions—McCarty cut its contracts to 2.34 cents, or 15 percent. Since then, contracts have returned to 2.75 cents a pound.

FEED-TO-MEAT RATE VITAL

One of the tipoffs of good broiler care is the rate at which the broilers convert their feed into meat. Broilers convert, on the average, 2.1 pounds of feed into 1 pound of meat. McCarty-State Pride growers average about 2.05 pounds of feed to 1 pound of meat.

Feed conversion ratio for broilers, United States, selected years.

Year	Ratio [1]
1940	4.22
1950	3.27
1955	2.80
1960	2.41
1964	2.39
1975	2.10

[1] Pounds of feed per pound of broiler meat.

If the Laytons should achieve a conversion rate of .05 pounds lower than the average of those farmers contracting with McCarty-State Pride during the 3 weeks before, during, and after the firm takes the birds to processing, they will be paid another quarter of a cent a pound (for a total of 3 cents) for the birds they raised under that contract.

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Beef cows and calves are the other half of the Laytons' major sources of income. Broilers don't keep Laytons occupied full time. Neither do these beef cattle. Together, they offer Laytons opportunity to stay on the farm. Calves are sold to others to be fed to market weight.

However, if the Laytons require more feed than the average to make a pound of broiler meat, it lowers their payment by a quarter of a cent a pound (making the payments 2.5 cents a pound).

So the idea is to raise a larger bird but with the least amount of feed. The Laytons once made an average of 1 pound of broiler meat from 1.95 pounds of feed with one batch of birds which averaged 3.9 pounds each. "We've been trying to achieve that again ever since," Ann says.

FIRMS COMBINE ASPECTS OF PRODUCTION

Broiler production requires vast investments of money and skilled management.

These are two reasons the broiler industry is an industry of concentrated ownership and increasing vertical integration.

What is vertical integration?

What were once independent feed dealers or feed manufacturers on one side of the farmer and processors on the other side are now combined under one ownership and involved in nearly all aspects of broiler production. In addition to providing the feed for growing the broilers under his control, a feed manufacturer may also take care of financing the entire enterprise, hatching the broiler chicks and processing the birds when they are ready for market. Like the farmer of old, he retains ownership of the bird from birth to death. That's vertical integration.

Some firms are integrated horizontally—owning more than one processing plant, feed mill, or hatchery.

Even in cooperatives, the broilers are owned by the integrator, which is the cooperative, and the farmer-growers sign contracts for raising the birds. Broiler cooperatives operate in much the same manner as other integrators—even dropping inefficient growers when necessary—but are owned by the farmer-growers, who share in successes or failures.

Essentially, there is no open market for live broilers in the United States. Probably 99 percent of the broilers grown in the United States are grown under some type of vertical integration or contractual arrangement. The other one percent is produced by small independent growers who continue to supply a select market, probably in a nearby city, and who charge a little more for their birds because each bird costs more to raise.

The industry is a productive chain, with the housewife or

diner at one end and the producers of better poultry lines at the other. Broiler growers such as Maurice and Ann Layton are indispensable links about mid way.

Extension specialist, Dr. Robert L. "Bo" Haynes of Mississippi State University, explains that if the grower can't make enough money to survive, then the integrator will be hurt . . . and so will the agency which lent the farmer the money to build his houses and grow the birds.

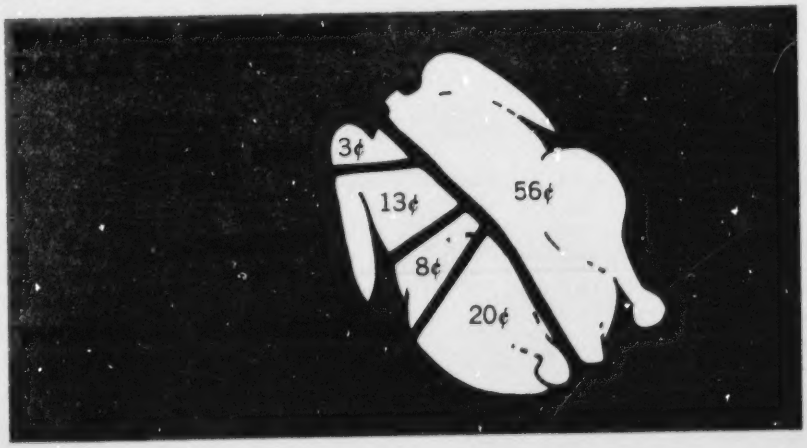
Even so, most farmers are not in a strong bargaining position to change integrators—shop around, so to speak, for the best contract. Integrators are forbidden by law, from dividing up the territories that they will serve, although if a grower should wish to change integrators, the integrator he approaches makes the final decision on whether to handle his business.

Farming is significantly different for the Maurice Layton who raises cattle than it is for the Maurice Layton who grows broilers. As a cattle raiser, he owns the animals he is feeding as well as the feed which goes into them. He makes all the traditional decisions that cattlemen make: how many to raise, what kind to raise, how to raise them, when and how to sell them.

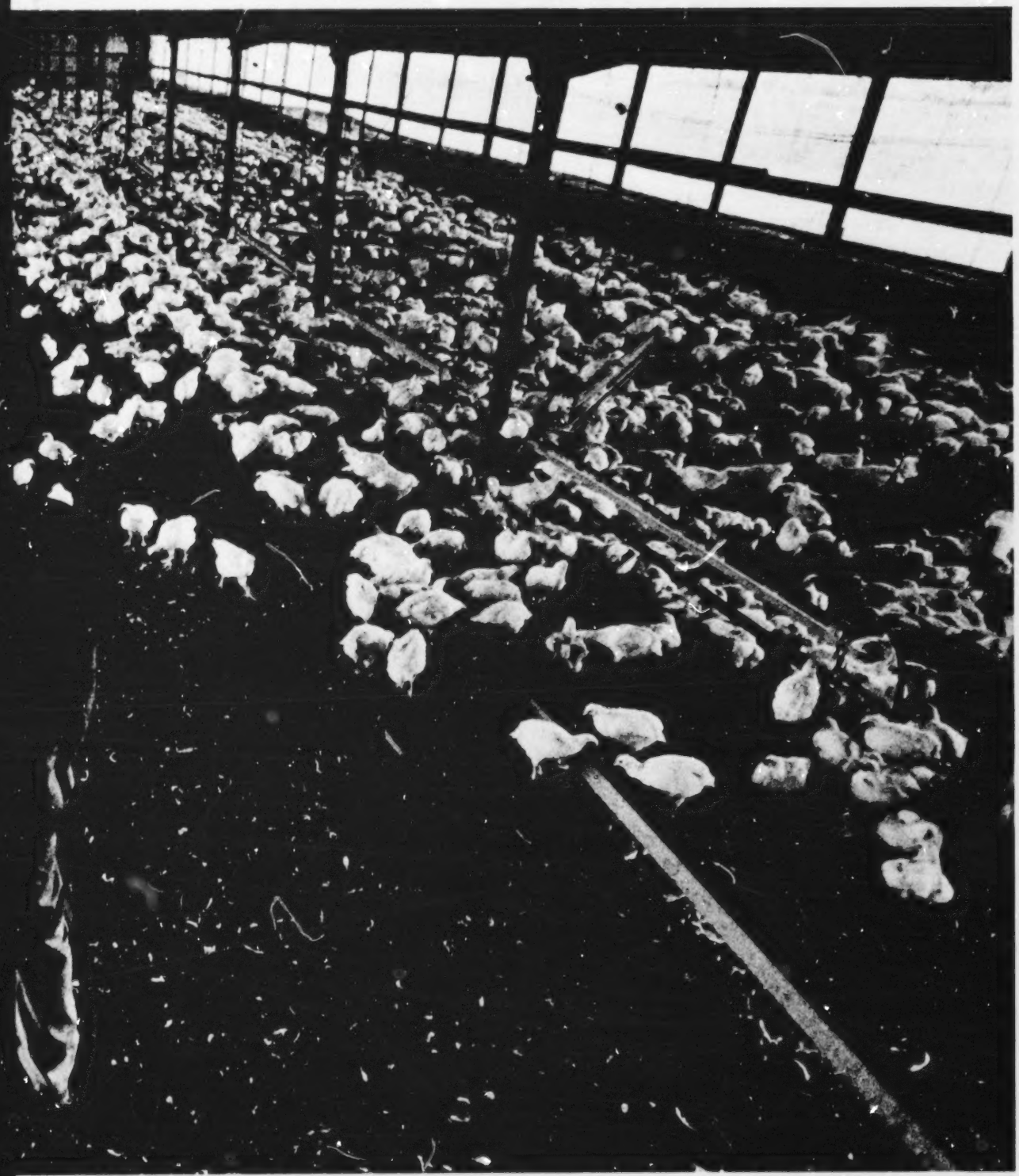
The Maurice Layton who grows broilers, however, doesn't own the birds or their feed; he makes none of the major financial decisions concerning them, though he tends them very carefully each day.

McCarty-State Pride—and the other integrators around the country—have assumed the financial responsibilities and many of the management decisions such as the feed to use, when to sell and where, what chicks to buy and in what numbers.

A batch of 30,000 day-old chicks headed for the Layton farm are moved out of McCarty-State Pride hatchery under guidance of Magee hatchery manager Eddie Loftin, right.



Broilers seem to explode like popcorn to fill their houses during the 7 to 8 weeks of their stay on the Layton farm. These 5-week-old birds surveyed by Maurice Layton occupied only a third of this space the day of their arrival on the farm. Devouring the scientifically formulated and mixed feed brought to them by long chain feeders (only half



the length of the Layton's newer broiler house is shown), the chicks convert every 2 pounds of feed into about 1 pound of meat, growing to a weight of nearly 4 pounds in less than 8 weeks. At 8 weeks of age, broilers weigh 43.7 times their original hatching weight. If humans grew at the same rate, an 8-week-old baby would weigh 349 lbs.

PRODUCTION BEGINS WITH PULLETS

At the beginning of the production line, McCarty-State Pride buys breeder pullets that will be raised by specialized farmers until they are hens ready to lay eggs. Another group of farmers on contract oversees the production of these breeder hens' eggs, which are picked up by McCarty-State Pride's trucks for delivery to the company's hatchery. Such layers produce eggs for hatching into broiler chicks for about 40 weeks. Then they are sold, some ending up in stores as baking hens and some being used in soups and pot pies.

(Usually in the industry, breeder pullets will be raised by the same farmers who later handle the production of hatching eggs from these birds.)

Hatched, vaccinated, and partially debeaked (just enough to prevent them from causing much harm to other chickens) the broilers-to-be are delivered at one day of age to broiler growers such as the Laytons. The birds are delivered in specially built, temperature-controlled chick buses that look like school buses.

In anticipation of such a delivery, the Laytons turn on the gas heaters in the brooders to warm the house. Earlier, they have cleaned and disinfected the broiler houses with special equipment during the 2 or 3 weeks the houses are empty between flocks.

After the Laytons have fed the broilers until ready for market, McCarty-State Pride sends out crews of catchers at night because chickens squat in the dark, become less excited, and are easier to catch. The catchers place the broilers in coops, put them aboard trucks, and haul them to McCarty-State Pride's processing plants, where they are inspected and prepared in appropriate ways for supermarket meat counters and other uses. The U.S. market in 1975 (as measured at federally-inspected processing plants) took 4.8 billion pounds of whole broilers, 2.6 billion pounds of cut up broiler meat and 541 million pounds of broiler meat that was further processed. Many of the whole broilers that left the processing plant were cut up into pieces before reaching meat counters in stores.

The expected market for broilers affects everything McCarty-State Pride does—weeks, months, even years in advance.

Eleven weeks before Christmas, McCarty-State Pride reduces the number of chicks hatched because people buy fewer broilers at Christmas time. Another cutback begins before Labor Day, when children start eating their lunches at school.

McCarty-State Pride's charts show that the biggest demand each year is around the Fourth of July, which is the high point for picnics and barbecues.

In November 1975, McCarty-State Pride's marketing people told the production boss, Tom Sparks, how many broilers they expected to sell every week in 1977. Then Sparks went through his system, determining how many eggs would be needed to produce the pullets that would become layers of eggs that would become broilers.

"The farmer's livelihood depends on how accurate I am," Sparks said. "If a broiler house lies empty for a month between batches, the farmer is losing money."

Normally, the houses are empty only 2 or 3 weeks between growing periods.

Naturally, Sparks and others in his position watch the prices

HOW CHICKEN IS PROCESSED FOR MARKET

Ninety percent of all broiler-fryer chickens produced in this country are sold as fresh or processed, and are shipped after being ice packed, CO_2 packed, or deep chilled. The rest is frozen or fully cooked. What do these terms mean to the consumer?

ICE PACK: The birds are plucked, eviscerated, USDA-inspected, and chilled. They are then shipped fresh, packed in containers filled with shaved ice. In a CO_2 pack, carbon dioxide "snow" is used as the refrigerant. This process is essentially the same as the ice pack method.

DEEP CHILL, CHILL PACK, OR CRYSTAL PACK (more and more replacing ice pack methods): Chicken is rapidly cooled to 28° to 32° F, but not frozen. The chickens are usually packaged at the processor level and shipped dry-packed without ice in refrigerated trucks. This method of processing may result in some crystal formation. The flesh should be soft enough so that the shopper can depress the surface with his fingers.

FROZEN: The chicken is quick-frozen at the processing plant, shipped, and sold frozen. It is available in many forms—whole, parts, and precooked.

FRESH, FULLY COOKED: Chicken is fried, pan fried, roasted, barbecued at the store or in fast-food outlets, or is sold as delicatessen products in supermarkets.

Sometimes a package of chicken will bear the label "ready to cook." This means simply that the chicken has been plucked, eviscerated, chilled, and is ready for the consumer to cook as soon as removed from the package.

The time between processing and delivery to the consumer of unfrozen broilers is shortening. The elapsed time from live bird to retail store can be as short as 1 day but may be as much as 2 to 4 days.

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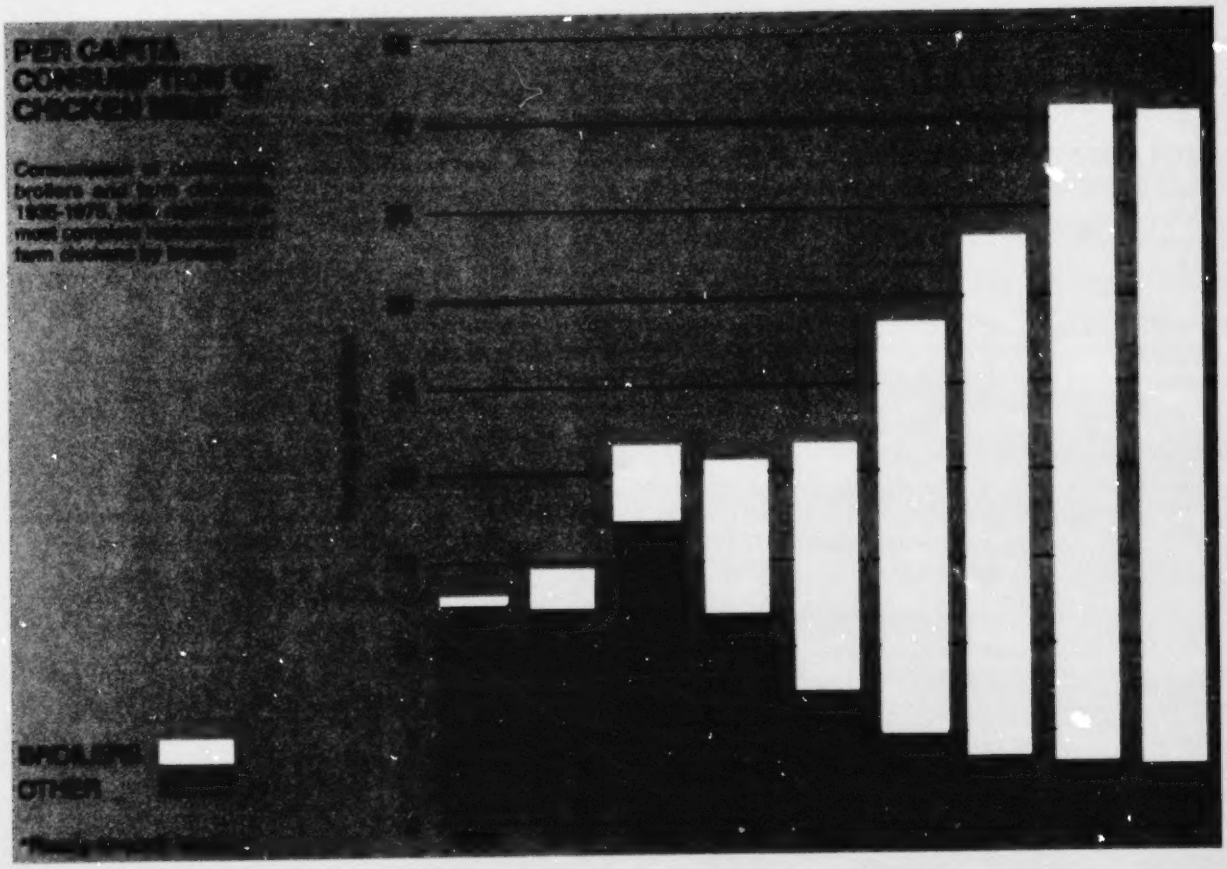
being paid for broilers and try to anticipate what those prices will be in the future. They know that the prices will depend not only on the number of broilers for sale but also on per capita income in the Nation, as well as the available quantities of competing foods—such as beef and pork—and their prices.

The availability and price of feed also affect the integrator's decision on how many broilers to grow. If the cost of production goes up, the integrator might cut back on his production.

Relieved of such marketing problems, today's broiler grower is still out on the farm and enjoying it.

Like other farm wives, Ann Layton has to juggle a lot of activities to get everything done. After preparing the noon meal for family and visitors, she takes a call from a friend concerning her art activities.



LAYTONS BUSY IN MANY WAYS

In December 1975, Maurice Layton was grazing three bulls, 100 brood cows, and 125 steers of his own, and taking care of another 75 cows and 75 steers for his mother. Each of his sons also is financially and physically responsible for a junior herd of 10 animals of his own, unless, as in Blake's case, college studies keep him away from the farm.

While Maurice brings hay to the cattle and checks on their condition each morning—"making sure they're all up and able to move"—Ann cleans the house and starts cooking the noon meal.

A typical noon meal at the Laytons might include fried chicken (they have it two or three times a week, buying it at the grocery), pinkeyed purple-hull peas, sweet potato pudding with raisins, candied sweet potatoes, pickled beets, fruit salad, rolls, iced tea, and jam cake. If guests

Noontime television news is important to most farmers, who must keep an eye and an ear tuned to current prices —of the goods they're buying and of the products they're selling. Maurice Layton, in a chair next to his kitchen, checks the prices of farm products in the Jackson, Miss., area.

Helvin Layton joins brother Blake on tractor hauling a pasture clipper. Behind them is family woodlot which provides timber to meet some expenses, including Blake's college education.

are expected, Ann might add corn bread, turnip greens, and potliquor (the liquid left in a pot after cooking meats or vegetables).

But even such good food can't keep the Laytons from the noon television reports on weather and markets.

The noon meal is timed so that the Laytons can switch on the television in the living room at 12:10 p.m. to hear weather predictions on channel 3 out of Jackson, Miss., followed by the markets at 12:15 p.m. The day's prices are quoted on such farm products as canner and cutter cows, heifer calves, and "good young stocker cows." Comments are heard from the set, such as "well, the hog market is up today" (followed by details) and "in Georgia poultry, the broiler market remained unsettled" (again followed by details). Local farm market prices are examined in great detail by the television announcer.

After the noon meal, the Laytons return to the chicken houses to repeat the morning routine and also check on the cattle.

Sometimes the calves are vaccinated. Other times, cattle are moved from one pasture to another. This can be done anytime the chickens aren't being cared for. From December until spring the cows are calving and need special attention.

There are a lot of chores on a farm—routine work that needs attention, sometimes daily, sometimes three times a day, sometimes according to the season of the year.

The Laytons need to cut the hay three or four times from May until October. They bale the hay in 1200- to 1500-pound bales, and keep the hay in the field for feeding the cattle from November through March. (The bales, thanks to modern machinery, are much larger than the familiar smaller ones stored under cover.)

Friendly banter is typical of relationship between Maurice Layton and company serviceman, Tim Waller. Behind them is bin which provides feed for chain feeding troughs in the Laytons' newer broiler house.

Two other activities directly concerned with the chickens occur anytime during the week. One is the delivery of feed from McCarty-State Pride.

In addition, the company's serviceman comes by twice a week.

SERVICEMAN KEY LINK WITH INTEGRATOR

The serviceman is the broiler owner's representative. He drops in regularly to see how the birds are doing. He "talks shop" with the farmer, offering advice, perhaps on how to make the best use of the integrator's feed. He brings medicine and checks on flock losses. He listens and looks for any signs of stress in the flocks. He's on call 24 hours a day to help growers with any problem in growing the birds.

The serviceman is an expert. He's probably a college graduate with a specialty in poultry. He also needs to be a diplomat. Some growers think they already know how to raise chickens without advice.

"Chicks don't need as much physical labor as they need 'tending to,' " Maurice explains. "You have to move through them slowly, or they'll crowd up against a wall and smother."

Chicks that carry bruises from such a feathered stampede aren't worth as much at the processing plant.

Once, Ann recalls, a helicopter circled over the farm and the Laytons found 150 dead chickens huddled in one corner of their house.

In effect, the Laytons are operating a finely tuned production machine (within another finely tuned machine, the broiler industry).

"Growing broilers is a continuous process that one man or a few people can handle better than a lot of people," Maurice said, "and if you turn your back on it very long, something is sure to go wrong."

Even when they are in their home, the Laytons have an ear tuned to the broiler houses and any unusual sounds.

Ann says that when the chicks are new, entering the broiler house is like walking into a nursery.

"The chicks are all chirping and busy when you come in, but by the time you leave, after cleaning out the waterers and feeding them, they're all settled down—cooing, sort of," she explains.

Maurice says that by the time the chicks are 6 to 7 weeks old, a half dozen "pet" chickens will come to meet him at the door as he enters.

FARM BECAUSE THEY WANT TO

"Ninety percent of the people farming today do so because they want to farm," Maurice says. "Back in the Thirties, they farmed because they didn't know anything else to do."

Now the Laytons' eldest child is learning that his "something else" is entomology—a science that deals with insects. Ann says he doesn't have that "chemistry" between animal and human that a broiler grower needs.

Obviously, his parents do.

Ann used to help with the cattle as well as the chickens. Before the boys got older and could take her place, she was out there herding and vaccinating with the best of them.

"Nowadays they've retired Mama," Ann said somewhat ruefully at the kitchen sink. "I'd rather be out there than in here. The quicker I get through with the housework and onto something else, the better."

Ann, like the rest of the family, is devoted to the outdoor life.

"We keep a 'corner' of the farm for wildlife and timber," Ann says. "Actually, we have several spots set aside for wildlife. They're part of the farm plan."

Does Maurice recommend broiler growing to others?

"Only if they have a real desire to do it," he replies.

Maurice and Ann figure they have a quarter of a million dollars invested in their enterprise, most of that in the price of their land. Besides land (which was valued at an average of $382 an acre in Mississippi in 1975), the Laytons have a $30,000 investment in cattle, about $40,000 in broiler houses and broiler house equipment (estimated cost of replacement today), $15,000 in their own home, and $25,000 in other equipment, such as two tractors, a hay baler, a disc, a pasture clipper, harrows, plows, planter-cultivator, and two hay mowers.

With this investment and a lot of work, they gross about $30,000 to $35,000 a year—including $16,000 on the cattle, $12 to $15,000 on the broilers, and $1,500 on timber sales.

In 1973, the Laytons netted about $18,000 after operating expenses, before taking out depreciation and debt payment (about $6,000 and $3,000, respectively).

Annual depreciation is the amount a farmer figures his buildings and machinery have lost in value in a year. He still has the cash equal to the depreciation and may spend it for operating the farm or anything else he wishes. However, if he doesn't have that money when the building or machinery needs to be replaced, he may need to borrow to pay for them.

In 1974, the Laytons netted only about $9,800 (and depreciation as well as debt payment still had to be subtracted).

In 1975, with a gross income of $31,565, the Laytons netted $11,665; but again, depreciation and debt payment whittled that down to about $3,000. That's what the Laytons make for their management and labor and return on their investment.

"What the farmer is trying to do," Maurice said, "is to accumulate something for retirement or for the kids—not put money in the bank."

He smiled and added,"From

MAURICE AND ANN'S INCOME AND EXPENSES, 1975

Income from:	
broilers	$14,000
cattle	16,000
timber	1,565
TOTAL	$31,565

Expenses	
seed	$ 1,500
feed	2,500
fertilizer	5,000
butane	1,500
electricity	150
repairs, broiler house	1,000
interest	3,000
income tax, social security	600
general repairs	1,450
other fuels	1,500
worming medicine, cattle	500
insurance	1,200
depreciation	5,600
debt payment	3,000
TOTAL	$28,500

Income	$31,565
Expenses	$28,500
Net	$ 3,065

Net covers management, labor, and return on investment

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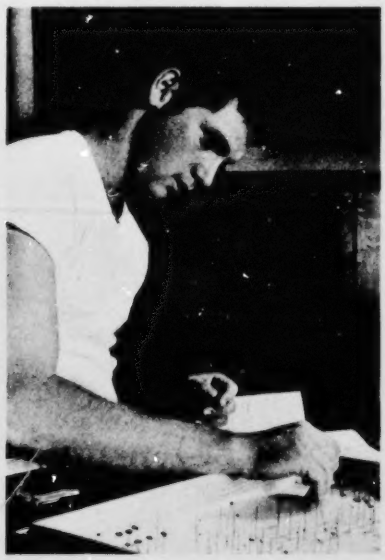
A university graduate who loves the country life, Ann Layton finds time between broiler care and other activities to express herself artistically.

Blake Layton studies entomology, a science that deals with insects, in college. Even when home, he's working on it—as well as helping around the farm and holding down another job.



a financial standpoint, I'm sure we'd be better off to sell out, invest the money for the interest, and find jobs doing something else; however, with us, farming is a way of life that we really enjoy."

At the end of 1975, the Laytons owed about $10,000 on their cattle, $10,000 on feeder calves, and $25,000 on the real estate.

BUILDING EQUITY WITH LABOR

Broiler growers with limited capital can build equity (an estate—property ownership—call it what you will) with family labor.

"The broiler industry is the salvation of the small farmer," Sparks says.

Compared with the farmer who raises just crops and no livestock or poultry, the broiler grower gets four or five paydays a year rather than just one or two big ones when the farmer sells his crops after harvest (assuming the crop grower has a good growing season).

Watching a feed truck being unloaded into his storage bin, Maurice says "That's what looks good to me. I don't pay out cash for feed, and I know I'm going to get something for my labor. Before I started growing broilers, I wasn't sure I was going to get anything for my labor OR my investment."

FAMILY HAS VARIED INTERESTS

The lives of Maurice and Ann Layton generally center around their children, but they have succeeded in maintaining some time for their own pursuits. For instance, Ann is caught up in crocheting, needlepoint, hooking rugs, painting and ceramics. Another of her projects is to establish better research facilities at their community library in nearby Magee.

Maurice is not only busy in promoting the conservation of land and wildlife in his area but attends university evening classes in political science, psychology, and sociology in nearby Raleigh.

Together, the Laytons are active in 4-H, the Farm Bureau, the Mississippi Cattle Association, and the Poultry Producers Association. The 4-H is a nationwide program coordinated by the Cooperative Extension Service. It involves young people and their parents in a great variety of activities—often outside of agriculture. The Farm Bureau is an independent general farm organization, the

Anita Layton and her Tennessee Walking Horse, Breezy, like to pause in one of the Layton farm's many ponds after riding over open fields. Riding is one of the reasons Anita likes the country life.

largest farm organization by far in the Nation.

As a part of 4-H activities, Anita, the daughter, has visited Washington, D.C., Chicago, Ill., and East Lansing, Mich. She'd like to be an anthropologist or an archeologist.

Her older brother, Blake, helped organize the Junior Soil Conservation Commissioners of Mississippi in 1972 and was named State youth conservationist of that year.

The farm permits Kelvin to be close to the nature that he loves. When a man once came to the Layton home and inquired if it were for sale, Kelvin, the only Layton at home, declared, "No way. This home will never be for sale."

"Life's to be lived and enjoyed," Maurice says "In the spring of the year, when everything is green and the grass is growing food, that's heaven on earth."

It was for the children that Maurice and Ann left their jobs in town to return to the farm. It is for them they are building an equity in land, buildings, and cattle.

The children, for their part, make it possible for Maurice and Ann to raise broilers and cattle without hiring outside help —a condition most satisfactory to Maurice who, like many farmers, has trouble finding skillful, conscientious help.

WHAT ABOUT TOMORROW?

What tomorrow will bring the Laytons and the rest of the broiler industry is anyone's guess.

Dynamic in the recent past, the industry continues to change.

Broiler experts say Americans cannot expect efficiencies to be achieved as rapidly as they were in the past . . . that improvements in feed conversion rates will come harder. Improvements in productivity may not stay ahead of rising costs, they warn.

Whatever happens in the industry, the results will show up not only on the supermarket shelves and in the food-serving establishments of the Nation but on thousands of farms like the Layton farm.

WHAT IT TAKES TO GROW BROILERS

To get into the broiler-growing business the prospective grower must first find an integrator.

When the National Broiler Council (NBC) receives an inquiry from a potential grower, its response, a spokesman said, follows the following lines:

"Of primary importance is whether a slaughter/processing plant is located within about 25 miles . . . or 50 miles at a maximum. All the feed has to be transported to the farm, and the market-weight chickens have to be hauled to the processing plant. Without a compact production area, the transportation costs increase excessively.

"Local county extension agents can advise potential growers on whether a plant is nearby. It is best to go directly to the company and discuss specifically what is involved in the contractual agreement.

"In some cases where the producer/processor company is expanding production and is looking for more growers, the company will advertise for additional growout capacity. In this situation, it generally means the contract payments will have to be increased across the board to attract new growers or additional housing on the current growers' farms."

Not every broiler-growing area —most of them are south of the Mason-Dixon Line—is looking for growers. In early 1976, the Delmarva Peninsula (made up of parts of Delaware, Maryland, and Virginia) was looking for more growers. In Arkansas, the Nation's largest broiler-producing State, integrators were reported to have enough growers on contract.

There are many kinds of production contracts across the country. Some contracts—typically in the State of Maine—call for the farmer to be paid on the basis of the number of square feet in his broiler houses —specifically, how many square feet used each week. Some contracts are based on what the birds sell for. Some call for the growers to pay for the heating fuel; others do not.

Sometimes houses are leased by the company and the grower is paid wages. Other variations cover an allowance for putting in insulation, floor space per chick started, a distribution of profits, penalties for condemnation losses, the cost of disinfectants and of applying them, the cost of litter or of cleaning out the house, and the cost of catching the birds and hauling them to market.

Maurice and Ann Layton's contract with McCarty-State Pride has been adjusted upward with the price of fuel, which tripled in cost locally from 10 cents a gallon in 1968 to 30 cents a gallon in 1975.

A prospective grower needs a contract before approaching a lending institution for the money to build broiler houses and install equipment. Most people considering it already occupy the land they will build upon.

Nearly every grower across the country has a source of income other than that from growing broilers. In many areas, as with the Layton family in Mississippi, growing broilers fits in well with growing feeder calves. For one thing, high nitrogen chicken litter can be spread as fertilizer on grazing land.

Whether the farmer grower makes enough money on his operation (or doesn't lose too much) is a question of his values, his contract, and his accounting procedure. One agricultural economist makes a case that a farmer producer in the Delmarva Peninsula who invests $2.50 per bird capacity in the operation (the rule of thumb for today's operation in that area), would lose money if paid 10 cents a bird.

On the other hand, he would make money if he were paid 12 cents a bird. That money would pay him for his labor and management.

By growing broilers, the farmer-producer is building something to leave behind or to sell when the time comes. He is living where he wants to live while his net worth is increasing in value.

What kind of attitude and capabilities should the prospective grower possess?

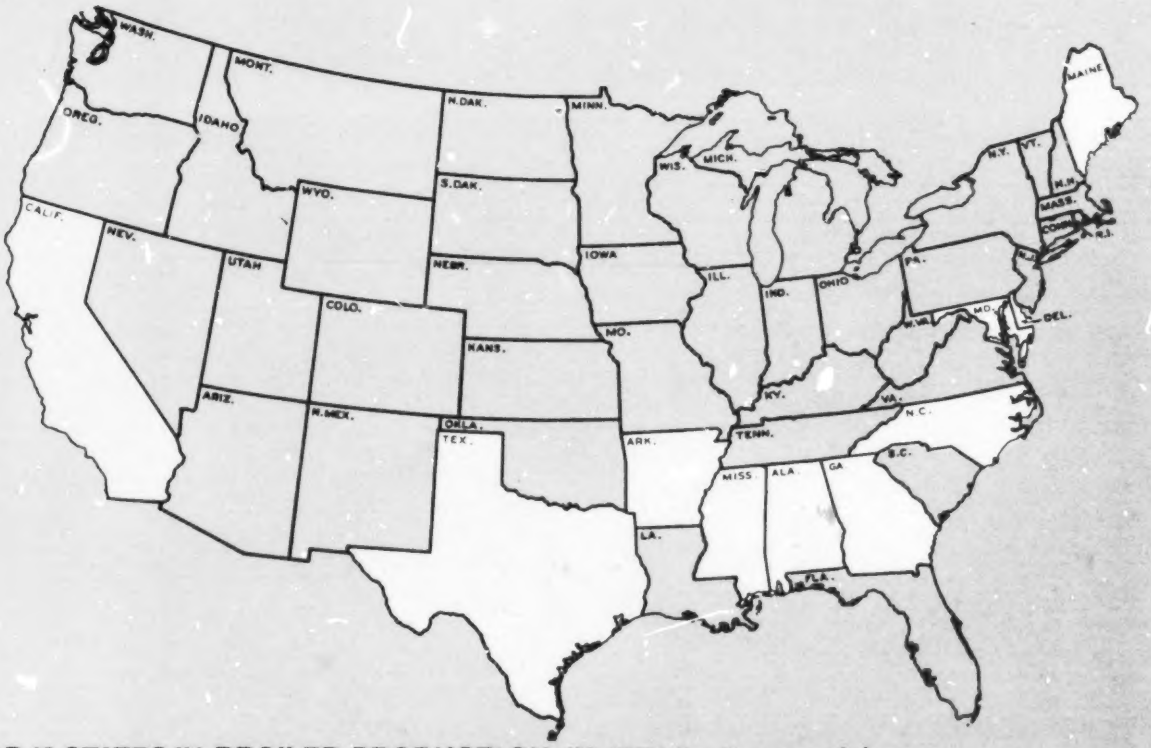
The National Broiler Council suggests:

- A desire to grow chickens
- The financial capability to provide adequate housing for the chickens
- Adequate and dependable labor
- Willingness to meet contractual obligations
- A mind for business
- An open mind—to accept improvements in growing chickens as the improvements become known.

In some areas, integrators actually prefer the prospective growers to have little or no experience in growing chickens —at least as they were grown in years past. They'd rather teach the grower the system the integrator considers best.

In the evening, when they can hear the evening songs of birds in the trees nearby, and watch the sun set over a rolling countryside, the Laytons like to get together out in the yard in warm weather. Anita may pick up her guitar and start singing a current tune, while her brothers, her parents, and her dog Kim listen.

RULES THAT HELP



TOP 10 STATES IN BROILER PRODUCTION IN 1975 (by thousands):

Arkansas	481,886	Mississippi	231,301	California	95,625
Georgia	416,599	Maryland	179,769	Maine	81,035
Alabama	395,769	Texas	162,769		
North Carolina	283,986	Delaware	136,278		

WHY THE SOUTH?

The center of broiler production has moved South—to the Southeastern States of Georgia and North Carolina and the South Central States of Arkansas, Alabama, Mississippi, and Texas.

The earlier production center—the Delmarva Peninsula (made up of parts of the States of Delaware, Maryland, and Virginia)—still maintains a strong activity, however.

Why the South?

Well, heating fuel isn't so great an expense. Beyond that, Raymond T. Parkhurst, then director of the South Central Poultry Research Laboratory, wrote in 1967:

"The competition for labor can be a very important factor in the growth of broiler production in an area. If broiler growers have no alternative, they will probably continue to operate when prices are depressed and income is low. However, when industries offer an alternative revenue, the wage offered, the relative 'pleasantness' of the jobs, the time of year, the duration of the job, and the skill and responsibility required all become factors. In the South, historically, there have been fewer agricultural alternatives and less industrial demand for labor."

GLOSSARY

Broiler
A young chicken, usually under 13 weeks old, that is tender-meated with soft, pliable, smooth-textured skin and flexible breastbone cartilage.

Broiler house
The building in which broilers are grown. Its design depends upon the climate, age of the house, and money the owner can invest in it. One of the common designs is a long, low building having windows or curtains along its sides to control ventilation, and larger doors at the ends to permit the entrance of house-cleaning vehicles. However, environmentally controlled houses with no windows are coming into wider use. Fans and insulation provide the proper atmosphere with less labor and management time involved.

Farmer-grower
People, such as the Laytons, who have contracted with the owner of the broilers to grow the broilers from 1 day of age to marketing time, about 7½ to 8 weeks later. Farmer-growers usually live on the land.

Feed conversion ratio
The pounds of feed required to produce a pound of live broiler. If a broiler consumes 8 pounds of feed and weighs 3.33 pounds when marketed, the feed conversion is 2.4 (8 divided by 3.33). If it takes 6 pounds of feed to bring a broiler to a market weight of 3.33 pounds, the feed conversion is 1.8. If feed were $4.50 per hundred pounds in both instances, it would cost 27 cents to feed the broiler with a ratio of 1.8, compared with 36 cents to feed a broiler with a ratio of 2.4. With a flock of 30,000 chickens, the difference in feed cost is $2,700.

Fryer
Another name for broiler.

Integrator
A firm, cooperative, or a person that controls more than one stage in the production of broilers . . . usually everything from broiler egg production through processing. It owns the broilers. It contracts with farmer-growers to grow them. Large integrators may also own more than one unit of important phases of the production —more than one processing plant, for instance. Sometimes a firm, cooperative, or person that mixes feed for commercial sale also owns the broilers and contracts with farmer-growers to raise the broilers, using the manufacturer's feed. Some big feed manufacturers who got involved in this form of integration have ceased broiler operations in recent years.

Litter
The blanket of wood chips, sawdust, or other absorbent material upon which the birds walk and rest in the broiler houses. It is removed or covered as it becomes caked. When a new batch of broilers enters the broiler house, it is removed and replaced with new litter.

Processor
The person or firm that kills and processes chickens for retail use, usually the integrator.

Producer
The person or firm that owns the broilers, usually an integrator.

Retailer
The person or firm who sells ready-to-cook broilers to the consumer.

Serviceman
An employee of the producer who visits the farmer-grower regularly—perhaps twice weekly—to see how the broilers are progressing toward market weight. He checks the entire system of growing the chickens on each farm for disease-free, efficient production of high-quality birds.

SUCCESS AT THE TOP

How many firms are producing broilers in the United States? How much of total production is turned out by, say, the top 20?

One close measure of the number of firms producing broilers is the number which are processing them. In 1975, there were 154 firms processing young chickens under Federal inspection (less than 2 percent of broiler production comes through the other plants—State-inspected plants which meet Federal standards).

The trend in the number of processing firms has generally been downward. In 1960 there were 286 firms processing broilers. In 1964, there were 201 and in 1968 there were 153. But in 1972, the number bounced back up to 227 (only to come down again later).

In 1975, the 20 largest firms processing broilers turned out 55 percent of the total production in federally inspected plants. The same number turned out only 32 percent in 1960. Their share generally has been increasing through the years.

Since 1964, the four largest firms have generally produced 17 or 18 percent of the total market.

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The promise of tomorrow is continually renewing on the Layton farm. About 5 batches of day-old chicks arrive each year.

Prints of these photographs may be obtained from the Photography Division, Office of Governmental and Public Affairs, Room 530A, U.S. Department of Agriculture, Washington, D.C. 20250. Limited numbers are available free to news media. Others pay a small fee.

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